

JUL 18 2006

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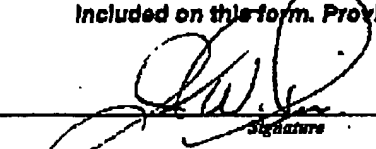
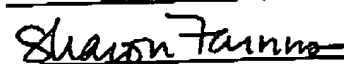
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JUL 18 2006

<b>TRANSMITTAL LETTER</b> (General - Patent Pending)				Docket No. 92478-0900	
In Re Application Of: Tomoyuki Okada et al.					
Application No. 10/525,788	Filing Date September 26, 2005	Examiner Not yet assigned	Customer No. 52044	Group Art Unit 3614	Confirmation No.
Title: RECORDING MEDIUM, PLAYBACK DEVICE, PROGRAM, PLAYBACK METHOD, AND RECORDING METHOD					
<b><u>COMMISSIONER FOR PATENTS:</u></b>					
Transmitted herewith is:  Revised Petition to Make Special w/Attachment Preliminary Amendment					
In the above identified application.					
<input checked="" type="checkbox"/> No additional fee is required. <input type="checkbox"/> A check in the amount of _____ is attached. <input checked="" type="checkbox"/> The Director is hereby authorized to charge and credit Deposit Account No. 19-2814 as described below. <input type="checkbox"/> Charge the amount of _____ <input checked="" type="checkbox"/> Credit any overpayment. <input checked="" type="checkbox"/> Charge any additional fee required. <input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached. <b>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</b>					
 _____ Signature			Dated: July 18, 2006		
Joseph W. Price Reg. 25,124 Snell & Wilmer LLP 600 Anton Boulevard, Suite 1400 Costa Mesa, CA 92626 Tel: 714-427-7420 Fax: 714-427-7789			I hereby certify that this correspondence is being transmitted via facsimile to the USPTO at 571-273-8300 on <u>7-18-06</u> .		
cc:			By: <u>Sharon Farnus</u>  _____ Signature		
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Patent  
92478-0900

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Tomoyuki Okada et al.

Serial No.: 10/525,788

Filed: September 26, 2005

For: RECORDING MEDIUM, PLAYBACK  
DEVICE, PROGRAM, PLAYBACK  
METHOD, AND RECORDING  
METHOD

Patent Examiner:

Group Art Unit: 2614

July 18, 2006

Costa Mesa, California 92626

REVISED PETITION TO MAKE SPECIAL

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sirs:

In accordance with MPEP Section 708.02(viii), applicant hereby requests that the above-identified application be made special, and a fee required in accordance with 37 C.F.R. Section 1.17(i) was submitted previously.

It is believed that the attached Preliminary Amendment presents all the claims directed to a single invention. If, however, it is determined that the claims are not directed to a single invention, applicant hereby agrees to elect without traverse as a prerequisite to the granting of special status.

The Decision of May 18, 2006 raised an issue as to whether the search conducted in the Japanese Patent Office was directed to the same or similar scope of claims for which special status is requested. The answer is yes.

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The claims as filed in the application were English translations from the Japanese claims that were examined in the International Search Report. The Preliminary Amendment still presents the same invention as can be seen from the attached document which shows the corresponding relationships between the currently pending claims and the claims originally filed in the application. Here, the numbers in the parentheses [x] after the claim numbers indicate originally filed claims that the current claims are based on. Additionally, parts in the current claims that have been modified from the original claims are indicated by underscores.

The following corresponding relationships can be clearly understood from the document:

Claim 48 corresponds to Claim 1, and no change has been made to the contents;

Claim 49 corresponds to Claim 2, and no change has been made to the contents except for the underscored part(s);

Claim 50 corresponds to Claim 13, and no change has been made to the contents except for the underscored part(s);

Claim 51 corresponds to Claim 4, and no change has been made to the contents except for the underscored part(s);

Claim 52 corresponds to Claim 5, and no change has been made to the contents except for the underscored part(s);

Claim 53 corresponds to Claim 7, and no change has been made to the contents except for the underscored part(s);

Claim 54 corresponds to Claim 8, and no change has been made to the contents except for the underscored part(s);

Claim 55 correspond to Claim 9, and no change has been made to the contents except for the underscored part(s);

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Claim 56 corresponds to Claim 10, and no change has been made to the contents except for the underscored part(s);

Claim 57 corresponds to Claim 12, and no change has been made to the contents except for the underscored part(s);

Claim 58 corresponds to Claim 19, and no change has been made to the contents except for the underscored part(s);

Claim 59 corresponds to Claim 23, and no change has been made to the contents except for the underscored part(s);

Claim 60 corresponds to Claim 24, and no change has been made to the contents except for the underscored part(s);

Claim 61 corresponds to Claim 35, and no change has been made to the contents except for the underscored part(s);

Claim 62 corresponds to Claim 27, and no change has been made to the contents except for the underscored part(s);

Claim 63 corresponds to Claim 29, and no change has been made to the contents except for the underscored part(s);

Claim 64 corresponds to Claim 30, and no change has been made to the contents except for the underscored part(s);

Claim 65 corresponds to Claim 31, and no change has been made to the contents except for the underscored part(s);

Claim 66 corresponds to Claim 32, and no change has been made to the contents except for the underscored part(s);

Claim 67 corresponds to Claim 34;

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Claim 68 corresponds to Claim 41;

Claim 69 corresponds to Claim 45;

Claim 70 corresponds to Claim 46; and

Claim 71 corresponds to Claim 47.

An international search has been made in the Japanese Patent Office in International Application PCT/JP2003/011679 which is the foreign priority application of the present application and thereby meets the requirements for accelerated examination.

The invention of the recording medium of Claim 48 of the present application is representative of the distinguishing features also set forth in the playback device of Claim 59, program of Claim 69, and methods of Claim 70 and 71;

48. "A recording medium having video data, a plurality of programs, and a table recorded thereon, wherein each of the plurality of programs shows a playback control procedure of the video data, the table includes (1) identification information of each of the plurality of programs, and (2) information showing that each of the plurality of programs belongs to one of a movie mode and an enhanced mode, one of the plurality of programs includes a command for branching, and the branching command specifies a branch destination using indirect referencing via the table."

Regarding the recording medium, a table shows in which mode each program should be executed, and it is, therefore, possible to easily make the playback device execute a branching procedure involving mode switching where branching to another program is performed after the

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mode being switched. In the case where an execution body of scenarios in the movie mode is an interpreter for interpreting commands, and an execution body of scenarios in the enhanced mode is a Java Virtual Machine that interprets methods in an object-oriented language, it is possible to cause the playback device to perform the program provision by making the playback device refer to the mode-indicating information in the table, and selectively starting one of the execution bodies.

The video data recorded on the recording medium is played on either a screen for playing normal movies or a screen for the Java Virtual Machine and the browser. Such screen switching allows for unprecedented and innovative virtual effects. In terms of branching from the movie mode to the enhanced mode, a branch destination is specified by indirect referencing via the table. By designing descriptive contents of the table, it is possible to realize operations for changing branch destinations between when the record medium is loaded on a playback device having a Java Virtual Machine and a browser and when it is loaded on a playback device not having those applications. As a result of the change in branch destinations, it is possible to close a path for branching to a program in the enhanced mode when the record medium is loaded on a playback device having no Java Virtual Machine and browser, which results in assuring that operations can be carried out on any type of playback devices.

In addition, such branching is achieved by branch commands conventionally used in DVD playback devices. Accordingly, it is possible to efficiently transport branching commands created for DVDs to such playback devices as described above.

The discussion below is based on the fact that the above two features of the recording medium (hereinafter referred to as the "present invention") of Claim 48 are not present in the cited references and these features are not obvious over any combination of these references.

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Feature I: in a table, (1) identification information of each of a plurality of programs in the recording medium and (2) information showing that each of the plurality of programs belongs to one of a movie mode and an enhanced mode are recorded; and

Feature II: one of the plurality of programs includes a command for branching, and the branching command specifies a branch destination using indirect referencing via the table.

The references reported in the International Search Report issued by the ISA as the prior art to the present invention are:

Japanese Laid-Open Patent Application 2000-57746;

Japanese Laid-Open Patent Application H11-161663;

Japanese Laid-Open Patent Application H10-327381;

Japanese Laid-Open Patent Application 2003-249057;

Japanese Patent Application 2003-23604; and

Japanese Laid-Open Patent Application H11-191282.

The following describes in detail pursuant to 37 CFR §1.111 how the above two claimed features are neither anticipated nor rendered obvious in light of these references.

(a) Japanese Laid-Open Patent Application 2000-57746 discloses a technology for recording the shared information 2001 playable on predetermined information playback devices, recording the specific information 2002 playable on specific information playback devices among the predetermined information playback devices, and recording, on a recording medium, the link information 2003 that indicates the relationship between the shared information and specific information. The present invention includes a plurality of information pieces whose

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execution bodies are different and recorded on a recording medium, in association with each other. However, what this reference is describing is information indicating a relationship between the shared information and the specific information, not a command for branching from one program to another. Even if the link information is hypothetically assumed to be a table, the reference does not include the concept of specifying a branch destination using an indirect reference via the table. Additionally, this reference cannot serve as a basis for denying the nonobviousness of the present invention because it only discloses an idea of differentiating and establishing uniqueness of functions with respect to individual information recording playback devices produced by different manufacturers, or sold by different distributors, and does not include any information stating that each program should be run on a particular execution body. In addition, the reference does not include a description that would have lead one skilled in the art come up with the above-mentioned features.

(b) Japanese Laid-Open Patent Application H11-161663 discloses a technology in which a URL is incorporated into a navigation packet of a Video Object Unit, and when the web button on the remote controller is hit during playback of DVD-Video, the URL is sent to the WWW browser 117 as an Internet address desired to be displayed so that HTML contents corresponding to the URL are obtained from an external server and displayed on a screen. This basically describes an idea of providing a navigation packet with a URL, but not a command for branching from one program to another. There is no teaching of either Feature I nor Feature II. This is because the reference only discloses the idea of displaying HTML contents on one execution body, and does not include any information for switching among multiple execution bodies to perform operations.

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(c) Japanese Laid-Open Patent Application H10-327381 discloses a technology of examining the conditions of the DVD reading device 104 and other components via a control bus and directing predetermined operations to them by causing the control processor 101 of the video playback device 100 to implement machine instructions for the control processor that are stored in the read-only memory 103 and the main memory 102. The reference only suggests making the execution body of the playback device implement some sort of operation. However, it teaches an idea of performing control by making a processor of a reading device implement machine instructions, and not a command for branching from one program to another. The reference only discloses a concept of giving expandability to a playback function and allowing for recording and playing video information as well as highly customized textual information, but does not include a description that would have permitted one skilled in the art to provide Features I and II in combination.

(d) Japanese Laid-Open Patent Application 2003-24905 discloses technology for realizing interaction, interlocking and synchronization of playback operations of an ENAV content 30 and video content 10 by prestoring the video content 10 and ENAV content 30 on a DVD-Video disk and causing the video playback engine 200 to play the video content 10 while causing the ENAV engine 300 to play the ENAV content 30. The reference attempts to record on a recording medium, not only normal contents but also data to increase the value of the film, and causing the playback apparatus to play these contents. However, what the reference describes is interaction, interlocking and synchronization with the playback of the video content 10, and not a command for branching from one program to another. Thus, the reference only discloses an idea of adding a new navigation function to a conventional DVD-Video, and does

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not include a description that would have made one skilled in the art come up with the above-mentioned Features I and II.

(e) Japanese Patent Application 2003-23604 discloses a technology of recording, in the form of script files, detailed additional information related to the video data recorded on the recording medium for example, explanations of scenes and introduction of characters. Information for linking each script file and a section of the video data which is displayed together with the content of the script file is recorded in an individual link file or in the name of the script file. Then, when the playback is performed, a script file corresponding to the currently playing video data is sought based on the information in the link file or the script file name, and the content of the script file is displayed on the screen together with the video data. Needless to say, the reference describes an addition of detailed information relating to video data, and not a command for branching from one program to another. Because the reference only discloses causing the playback apparatus to display explanations of scenes and introduction of characters in a film, and does not include a description that would have made one of ordinary skill in the art to combine Features I and II.

(f) Japanese Laid-Open Patent Application H11-191282 discloses technology for establishing audio and video sub-directories under the root directory of a DVD, and allowing for access, from audio management information AMG in the audio sub-directory, not only to audio contents ATS but also to video contents VTS while allowing for access, from video management information VMG in the video sub-directory, only to the video contents VTS. However, what the reference describes is a compatible technology of DVD audio and DVD video, and not a command for branching from one program to another. The literature only discloses compatible

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technology of DVD audio and DVD video, and does not include a description that would teach the combination of Features I and II.

The invention of Claim 49 of the present application adds further technical matters shown below.

"In the table, a title number is assigned to each pair of (1) the identification information and (2) the information, and

the indirect referencing is to specify a program of the branch destination, using the title numbers."

Application signaling, i.e., operation control of application programs in response to a switch in service, has been introduced into receiving apparatuses for the European digital broadcasting (DVB-MHP). By adding the technical matters described above, the recording medium of the present invention is capable of making the playback device perform application signaling in response to a switch in the titles. By making the playback device perform application signaling in a similar manner that the European-digital-broadcasting receiving apparatuses do, resources can be retrieved from an application each time when playback of a title in the playback device is finished. Thus, application operations similar to those performed on the European-digital-broadcasting receiving apparatuses can be also assured in the playback device of the recording medium. In addition, the "title" is a unit of playback which was introduced in the time of DVD playback devices, and is able to perform application signaling on, for example, DVD playback devices to be introduced in the near future in a similar manner that the European-digital-broadcasting receiving apparatuses do. Herewith, it is possible to efficiently transport applications used in the European-digital-broadcasting receiving apparatuses to DVD playback devices. Our invention designed to achieve such effects is of high technological value, and should be protected by promptly granting a patent.

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Claims 49 to 58 are all dependent claims of original Claim 1 (48), and, therefore, the subject matters specified in these claims also have novelty and are unobvious. Also, the playback apparatus of Claims 59 to 68, the program of Claim 69, the playback method of Claim 70 and the recording method of Claim 71 also have novelty and are unobvious similarly to original Claim 1 (48).

In summary, our claimed invention provides the following advantages over the prior art.

The switching of programs in the recording medium described above is realized by writing a branching command. Thus, the branching command for switching programs has a similar command format to that of the DVD-Video, and people in charge of film authoring who have engaged in the DVD-Video production are able to write a procedure for running a virtual machine program that is written in an object-oriented programming language by describing the identification information of the program and the information showing the mode of the program in the table, while advancing the authoring as if they were producing DVD-Videos.

Operational control of Java™ applications in response to a switch in service, i.e. application signaling according to service boundaries, has been introduced into receiving apparatuses for the European digital broadcasting (DVB-MHP). In the case of the recording medium of the present invention, it is possible to cause the playback apparatus to implement application signaling by specifying, in the table, the association between identification information of each program and information indicating the mode of the program.

People in charge of developing DVB-MHP applications write applications in view of application signaling. However, the recording medium of the present invention makes the playback apparatus perform application signaling based on the above-mentioned table, and

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therefore the developers who are familiar with developing DVB-MHP applications are able to produce applications for films without a sense of discomfort.

In cases where the people who are going to produce applications for films according to the present invention are either authoring people who have engaged production of DVD-Videos or DVB-MHP application developers, the present invention allows them to write programs for films without causing a feeling of inconvenience. As a result, it is possible to encourage both of these parties to enter the production of film programs, which leads to an improvement in film works. The invention designed to achieve such effects is of high technological value, and should be protected by promptly granting a patent.

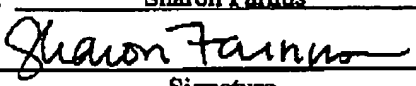
Consequently, we request Accelerated Examination for the present invention in pursuit of early grant of a patent.

If there are any questions, the undersigned attorney can be reached at the phone number listed below.

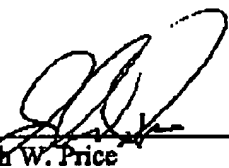
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Very truly yours,

SNELL & WILMER L.L.P.

By: Sharon Farnus  
  
Signature

Dated: July 18, 2006

  
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CLAIMS

48[1]. A recording medium having video data, a plurality of programs, and a table recorded thereon, wherein

8 each of the plurality of programs shows a playback control procedure of the video data,

the table includes (1) identification information of each of the plurality of programs, and (2) information showing that each of the plurality of programs belongs to one of a movie mode and an enhanced mode,

one of the plurality of programs includes a command for branching, and

the branching command specifies a branch destination using indirect referencing via the table.

15 49[2]. The recording medium of Claim 48, wherein  
in the table, a title number is assigned to each pair of (1) the identification information and (2) the information,  
and

20 the indirect referencing is to specify a program of the branch destination, using the title numbers.

50[13]. The recording medium of Claim 48, wherein  
the enhanced mode is a mode for causing a virtual machine  
25 to execute a program, and

an enhanced-mode program is described in a virtual machine-oriented programming language.

51[4]. The recording medium of Claim 48, wherein

a movie-mode program and an enhanced-mode program each  
are executed by two or more execution modules,

the two or more execution modules are resident programs  
5 on a same layer in a control hierarchy, and

the playback control procedure is a process description  
of a process for the same layer, described using one of (1) a  
command interpretable by the two or more execution modules and  
(2) a class structure function supplied from the two or more  
10 execution modules.

52[5]. The recording medium of Claim 51, wherein

the class structure function is one of (1) a function  
for causing a playback device to execute a playback control based  
15 on a predefined playback path, (2) a function for setting a  
predetermined value to a register in the playback device and  
(3) a function for acquiring the value set to the register.

53[7]. The recording medium of Claim 52, wherein

20 the value set to the register is a value showing one  
of (1) an audio setting in the playback device, (2) a subtitle  
setting in the playback device, (3) an angle setting in the  
playback device, (4) a currently played title, (5) a currently  
played chapter, and (6) a current playback point.

25

54[8]. The recording medium of Claim 52, having pieces of  
playlist information recorded thereon, wherein

each piece of the playlist information defines a playback



path by arranging pieces of information showing playback  
sections in the video data according to a playback order, and  
the playback control executed with the class structure  
function is based on the playback path defined by each piece  
5 of the playlist information.

55[9]. The recording medium of Claim 54, wherein  
each of the plurality of programs includes a function  
call for calling the class structure function for executing the  
10 playback control,  
the function call includes two arguments,  
of the two arguments, a first argument specifies a piece  
of the playlist information, and  
a second argument specifies a starting point in the  
15 playback path.

56[10]. The recording medium of Claim 55, wherein  
the starting point is specified using one of a playback  
section, a playback time, and a chapter.  
20

57[12]. The recording medium of Claim 53, wherein  
the branching is to branch from the movie-mode program  
to the enhanced-mode program,  
the playback control procedure performed by the  
25 movie-mode program is to specify a starting point in the playback  
path defined by a piece of the playback information for playback  
execution, and  
the playback control procedure performed by the

enhanced-mode program is to specify the starting point in the playback path defined by the same piece of the playback information for playback execution.

5 58[19]. The recording medium of Claim 48, wherein  
a movie-mode program includes a button command,  
the button command is a command for branching to the  
enhanced-mode program, and is recorded on the recording medium  
as a multiplexed stream after being multiplexed with the video  
10 data and subtitle data, and  
each piece of the subtitle data is image data of a button,  
and the button command is executed when a confirmation operation  
is conducted with respect to the image data of the button.

15 59[23]. A playback device relating to a recording medium having  
video data, a plurality of programs, and a table including  
indexes pertaining to the respective plurality of programs  
recorded thereon, comprising:

a plurality of modules operable to execute the  
20 respective plurality of programs, the plurality of modules  
including a module corresponding to a movie mode and a module  
corresponding to an enhanced mode; and

a manager operable to control branching between the  
plurality of programs, wherein

25 the table is information showing that each of the  
plurality of programs belongs to either a movie mode or an  
enhanced mode,

the branching is described, for each of the plurality

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of programs, using indirect referencing via the table, and  
the manager decides, at a time of the branching, a module  
for executing a program of a branch destination by referring  
to the table.

5

60[24]. The playback device of Claim 59, wherein  
in the table, a title number is assigned to each pair  
of (1) identification information of each of the plurality of  
programs and (2) the information, and

10 the indirect referencing is to specify a program of the  
branch destination, using the title numbers.

61[35]. The playback device of Claim 59, wherein  
the movie-mode corresponding module has a virtual  
15 machine, and

an enhanced-mode program is described in a virtual  
machine-oriented programming language.

62[27]. The playback device of Claim 59, wherein  
20 a movie-mode program and an enhanced-mode program each  
are executed by two or more execution modules,

the play back device further comprising:

a register; and

a playback control engine operable to perform a  
25 functional operation in response to a direction from each of  
the movie-mode and the enhanced-mode corresponding modules,  
wherein

the functional operation is one of (1) receiving a value

5

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from one of the modules and setting the value to the register,  
(2) acquiring the value from the register and passing the value  
over to one of the modules, and (3) playing the video data  
according to a predetermined playback path.

5

63[29]. The playback device of Claim 62, wherein

the value set to the register is a value showing one  
of (1) an audio setting in the playback device, (2) a subtitle  
setting in the playback device, (3) an angle setting in the  
10 playback device, (4) a currently played title, (5) a currently  
played chapter, and (6) a current playback point.

64[30]. The playback device of Claim 62, wherein

pieces of playlist information are recorded on the  
15 recording medium,

each piece of the playlist information defines a  
playback path by arranging pieces of information showing  
playback sections in the video data according to a playback order,  
and

20 a playback control executed by the playback control  
engine is based on the defined playback path.

65[31]. The playback device of Claim 64, wherein

each of the plurality of programs includes a function  
25 call for calling, via the movie-mode or the enhanced-mode  
corresponding module, the functional operation of playing the  
video data performed by the playback control engine,  
the function call includes two arguments,

of the two arguments, a first argument specifies a piece  
of the playlist information, and  
a second argument specifies a starting point in the  
playback path.

5

66[32]. The playback device of Claim 65, wherein  
the starting point is specified using one of a playback  
section, a playback time, and a chapter.

10 67[34]. The playback device of Claim 64, wherein  
the branching is to branch from the movie-mode program  
to the enhanced-mode program,

the playback control procedure performed by the  
movie-mode program is to specify the starting point and have  
15 the playback control engine perform playback, and

the playback control procedure performed by the  
enhanced-mode program is to specify the same starting point in  
the playback path and have the playback control engine perform  
playback.

20

68[41]. The playback device of Claim 59, comprising:

a demultiplexer operable to demultiplex a multiplex  
stream to obtain a button command, the video data, subtitle data;

an image decoder operable to decode image data of a  
25 button; and

a video decoder operable to decode the video data,  
wherein

a movie-mode program includes the button command,

the button command is a command for branching to the enhanced-mode program, and is recorded on the recording medium as the multiplex stream after being multiplexed with the video data and the subtitle data,

5 each piece of the subtitle data is the image data, and the movie-mode corresponding module executes the button command when a confirmation operation is conducted with respect to the image data.

10 69[45]. A playback processing program relating to a recording medium having video data, a plurality of programs, a table including indexes pertaining to the respective programs recorded thereon, comprising the following processing:

having a computer perform a plurality of execution steps  
15 in each of which one of the plurality of programs is executed, and a control step for controlling branching between the plurality of programs, the plurality of execution steps including an execution step corresponding to a movie mode and an execution step corresponding to an enhanced mode, wherein  
20 the table is information showing that each of the plurality of programs belongs to either a movie mode or an enhanced mode,

the branching is described, for each of the plurality of programs, using indirect referencing via the table, and

25 the control step is a step for deciding, at a time of the branching, an execution step for executing a program of a branch destination by referring to the table.

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70[46]. A playback method relating to a recording medium having video data, a plurality of programs, a table including indexes pertaining to the respective programs recorded thereon, comprising the following steps:

6 a plurality of execution steps in each of which one of the plurality of programs is executed, the plurality of execution steps including an execution step corresponding to a movie mode and an execution step corresponding to an enhanced mode; and

10 a control step for controlling branching between the plurality of programs, wherein

the table is information showing that each of the plurality of programs belongs to either a movie mode or an enhanced mode,

15 the branching is described, for each of the plurality of programs, using indirect referencing via the table, and

the control step is a step for deciding, at a time of the branching, an execution step for executing a program of a branch destination by referring to the table.

20

71[47]. A recording method of a recording medium, comprising the following steps:

creating application data; and

recording the created application data on the recording

25 medium, wherein

the application data includes video data, a plurality of programs, and a table,

each of the plurality of programs shows a playback

control procedure of the video data,

the table includes (1) identification information of  
each of the plurality of programs, and (2) information showing  
that each of the plurality of programs belongs to either a movie  
5 mode or an enhanced mode,

one of the plurality of programs includes a command for  
branching, and

the branching command specifies a branch destination using  
indirect referencing via the table.



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Patent  
92478-0900

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Tomoyuki Okada et al.

Serial No.: 10/525,788

Filed: September 26, 2005

For: RECORDING MEDIUM, PLAYBACK  
DEVICE, PROGRAM, PLAYBACK  
METHOD, AND RECORDING  
METHOD

Patent Examiner:

Group Art Unit: 2614

July 18, 2006

Costa Mesa, California 92626

**PRELIMINARY AMENDMENT**

**VIA FACSIMILE**

**1-571-273-8300**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sirs:

Prior to an examination of the above-identified application, please enter the following  
amendments:

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**IN THE CLAIMS:**

Please cancel without prejudice Claims 1-47.

Please add the newly-drafted Claims 48-71.

48. (New) A recording medium having video data, a plurality of programs, and a table recorded thereon, wherein

each of the plurality of programs shows a playback control procedure of the video data,

the table includes (1) identification information of each of the plurality of programs, and (2) information showing that each of the plurality of programs belongs to one of a movie-mode and an enhanced-mode,

one of the plurality of programs includes a command for branching, and the branching command specifies a branch destination using indirect referencing via the table.

49. (New) The recording medium of claim 48 wherein in the table, a title number is assigned to each pair of (1) the identification information and (2) the information, and

the indirect referencing is to specify a program of the branch destination, using the title numbers.

50. (New) The recording medium of Claim 48, wherein the enhanced-mode is a mode for causing a virtual machine to execute a program, and

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an enhanced-mode program is described in a virtual machine-oriented programming language.

51. (New) The recording medium of Claim 48, wherein

a movie-mode program and an enhanced-mode program each are executed by two or more execution modules,

the two or more execution modules are resident programs on a same layer in a control hierarchy, and

the playback control procedure is a process description of a process for the same layer, described using one of (1) a command interpretable by the two or more execution modules and (2) a class structure function supplied from the two or more execution modules.

52. The recording medium of Claim 51 wherein

the class structure function is one of (1) a function for causing a playback device to execute a playback control based on a predefined playback path, (2) a function for setting a predetermined value to a register in the playback device and (3) a function for acquiring the value set to the register.

53. (New) The recording medium of Claim 52, wherein

the value set to the register is a value showing one of (1) an audio setting in the playback device, (2) a subtitle setting in the playback device, (3) an angle setting in the playback device, (4) a currently played title, (5) a currently played chapter, and (6) a current playback point.

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54. (New) The recording medium of Claim 52, having pieces of playlist information recorded thereon, wherein

each piece of the playlist information defines a playback path by arranging pieces of information showing playback sections in the video data according to a playback order, and

the playback control executed with the class structure function is based on the playback path defined by each piece of the playlist information.

55. (New) The recording medium of Claim 54, wherein

each of the plurality of programs includes a function call for calling the class structure function for executing the playback control,

the function call includes two arguments,

of the two arguments, a first argument specifies a piece of the playlist information, and

a second argument specifies a starting point in the playback path.

56. (New) The recording medium of Claim 55, wherein

the starting point is specified using one of a playback section, a playback time, and a chapter.

57. (New) The recording medium of Claim 53, wherein

the branching is to branch from the movie-mode program to the enhanced-mode program,

the playback control procedure performed by the movie-mode program is to specify a starting point in the playback path defined by a piece of the playback information for playback execution, and

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the playback control procedure performed by the enhanced-mode program is to specify the starting point in the playback path defined by the same piece of the playback information for playback execution.

58. (New) The recording medium of Claim 48, wherein  
a movie-mode program includes a button command,  
the button command is a command for branching to the enhanced-mode program,  
and is recorded on the recording medium as a multiplexed stream after being multiplexed with the video data and subtitle data, and  
each piece of the subtitle data is image data of a button, and the button command is executed when a confirmation operation is conducted with respect to the image data of the button.

59. (New) A playback device relating to a recording medium having video data, a plurality of programs, and a table including indexes pertaining to the respective plurality of programs recorded thereon, comprising:

a plurality of modules operable to execute the respective plurality of programs, the plurality of modules including a module corresponding to a movie-mode and a module corresponding to an enhanced-mode; and

a manager operable to control branching between the plurality of programs, wherein

the table is information showing that each of the plurality of programs belongs to either a movie-mode or an enhanced-mode,

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the branching is described, for each of the plurality of programs, using indirect referencing via the table, and the manager decides, at a time of the branching, a module for executing a program of a branch destination by referring to the table.

60. (New) The playback device of Claim 59, wherein  
in the table, a title number is assigned to each pair of (1) identification information of each of the plurality of programs and (2) the information, and  
the indirect referencing is to specify a program of the branch destination, using the title numbers.

61. (New) The playback device of Claim 59, wherein  
the movie-mode corresponding module has a virtual machine, and  
an enhanced-mode program is described in a virtual machine-oriented programming language.

62. (New) The playback device of Claim 59, wherein  
a movie-mode program and an enhanced-mode program each are executed by two or more execution modules,  
the play back device further comprising:  
a register; and  
a playback control engine operable to perform a functional operation in response to a direction from each of the movie-mode and the enhanced-mode corresponding modules, wherein  
the functional operation is one of (1) receiving a value from one of the modules and setting the value to the register, (2) acquiring the value from the register and passing the

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value over to one of the modules, and (3) playing the video data according to a predetermined playback path.

63. (New) The playback device of Claim 62, wherein

the value set to the register is a value showing one of (1) an audio setting in the playback device, (2) a subtitle setting in the playback device, (3) an angle setting in the playback device, (4) a currently played title, (5) a currently played chapter, and (6) a current playback point.

64. (New) The playback device of claim 62, wherein

pieces of playlist information are recorded on the recording medium,  
each piece of the playlist information defines a playback path by arranging pieces of information showing playback sections in the video data according to a playback order, and  
a playback control executed by the playback control engine is based on the defined playback path.

65. (New) The playback device of claim 64, wherein

each of the plurality of programs includes a function call for calling, via the movie-mode or the enhanced-mode corresponding module, the functional operation of playing the video data performed by the playback control engine,

the function call includes two arguments,

of the two arguments, a first argument specifies a piece of the playlist information, and

a second argument specifies a starting point in the playback path.

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66. (New) The playback device of Claim 65, wherein  
the starting point is specified using one of a playback section, a playback time,  
and a chapter.

67. (New) The playback device of Claim 64, wherein  
the branching is to branch from the movie-mode program to the enhanced-mode  
program,

the playback control procedure performed by the movie-mode program is to  
specify the starting point and have the playback control engine perform playback, and

the playback control procedure performed by the enhanced-mode program is to  
specify the same starting point in the playback path and have the playback control engine  
perform playback.

68. (New) The playback device of Claim 59, comprising:  
a demultiplexer operable to demultiplex a multiplex stream to obtain a button  
command, the video data, subtitle data;  
an image decoder operable to decode image data of a button; and  
a video decoder operable to decode the video data, wherein  
a movie-mode program includes the button command, the button command is a  
command for branching to the enhanced-mode program, and is recorded on the recording  
medium as the multiplex stream after being multiplexed with the video data and the subtitle data,  
each piece of the subtitle data is the image data, and the movie-mode  
corresponding module executes the button command when a confirmation operation is conducted  
with respect to the image data.

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69. (New) A playback processing program relating to a recording medium having video data, a plurality of programs, a table including indexes pertaining to the respective programs recorded thereon, comprising the following processing:

having a computer perform a plurality of execution steps in each of which one of the plurality of programs is executed, and a control step for controlling branching between the plurality of programs, the plurality of execution steps including an execution step corresponding to a movie-mode and an execution step corresponding to an enhanced-mode, wherein

the table is information showing that each of the plurality of programs belongs to either a movie-mode or an enhanced-mode,

the branching is described, for each of the plurality of programs, using indirect referencing via the table, and

the control step is a step for deciding, at a time of the branching, an execution step for executing a program of a branch destination by referring to the table.

70. (New) A playback method relating to a recording medium having video data, a plurality of programs, a table including indexes pertaining to the respective programs recorded thereon, comprising the following steps:

a plurality of execution steps in each of which one of the plurality of programs is executed, the plurality of execution steps including an execution step corresponding to a movie-mode and an execution step corresponding to an enhanced-mode; and

a control step for controlling branching between the plurality of programs, wherein

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the table is information showing that each of the plurality of programs belongs to either a movie-mode or an enhanced-mode,

the branching is described, for each of the plurality of programs, using indirect referencing via the table, and

the control step is a step for deciding, at a time of the branching, an execution step for executing a program of a branch destination by referring to the table.

71. (New) A recording method of a recording medium, comprising the following steps:

creating application data; and

recording the created application data on the recording medium, wherein

the application data includes video data, a plurality of programs, and a table,

each of the plurality of programs shows a playback control procedure of the video data,

the table includes (1) identification information of each of the plurality of programs, and (2) information showing that each of the plurality of programs belongs to either a movie-mode or an enhanced-mode,

one of the plurality of programs includes a command for branching, and

the branching command specifies a branch destination using indirect referencing via the table.

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**REMARKS**

Applicant has already submitted the references found in a PCT search by the Japanese Patent Office. As requested, these references should be made of record.

If there are any questions with regards to this matter, the undersigned attorney can be contacted at the listed phone number.

I hereby certify that this correspondence is being transmitted via facsimile to the USPTO at 571-273-8300 on July 18, 2006.

Very truly yours,


**SNELL & WILMER L.L.P.**

By: Sharon Farnus

Sharon Farnus

Signature

Dated: July 18, 2006

  
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